

WEATHER IN THE UNITED STATES

THE WEATHER ELEMENTS

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GENERAL SUMMARY

January, 1930, was marked by abnormally low temperature, after the first week, that prevailed generally west of the Appalachian Mountains, except in the far Southwest, and the last half of the month was comparatively cold also in the Eastern States.

The area of abnormally low average temperature included the extreme Northwest, the Rocky Mountain region, and most of the Plains and Texas. Here the month was often found to be the coldest January of record or the coldest since 1875. The precipitation was greater than normal over many central and southwestern districts, but mainly less than normal in the eastern and northern districts.

The interior of the country was generally snow-covered during the coldest portion of the month.

PRESSURE AND WINDS

At the beginning of the month low pressure prevailed from Texas to the Great Lakes and westward to the Rocky Mountains and into the far Northwest, with light rain in portions of the Ohio and central Mississippi Valleys, eastern Kansas and Oklahoma, and in a few localities of the far Northwest. During the next few days the rain area overspread the eastern portion of Oklahoma and Texas and districts northward to Canada and eastward to the Atlantic, with generous to heavy falls in some localities, the precipitation turning to snow in the more northern districts. Also, during this period, moderate to generous rain fell in the far Northwest and the North Pacific States. By the morning of the 5th fair weather prevailed over nearly the whole country save in the far Northwest and the North Pacific States. By the next day this precipitation area had extended throughout the Pacific coast region, the Plateau, and northern half of the Rocky Mountain regions, and into the Northwest as far as western Minnesota, the precipitation being generally snow except in the Pacific coast region. This precipitation in southern California was the first, or the first of importance, for several months. At the same time an area of low pressure had moved in from the far Northwest, and by the morning of the 6th was central over southwestern Colorado, with low pressure extending to the upper Lake region, snow having fallen in most sections from the Dakotas westward and southwestward to the Rocky Mountain and Plateau regions. By the next morning, the precipitation area extended from eastern Texas to the Great Lakes and adjacent Canadian Provinces. A low-pressure area had also advanced from the central Pacific coast southeastward into northern Arizona, accompanied by rather heavy precipitation, and by the morning of the 8th was central over New Mexico, with a precipitation area extending from New Mexico and Arizona eastward and southeastward to the Mississippi Valley, and thence northeastward over the lower Lakes and into the St. Lawrence Valley. Generous to heavy falls were reported from many places in the central valleys and Lake region, while throughout the higher elevations the precipitation was snow. The morning of the 9th likewise showed general precipitation, mostly snow, from the central Great Plains States to southern Texas, and northeastward through the central valleys to the Canadian Maritime Provinces.

During the next several days, a series of low-pressure areas, accompanied by moderate to light precipitation, moved from the central Pacific coast, and while they apparently dissipated upon reaching the southern Rocky Mountain region, the areas of cloudy and stormy weather continued to overspread most sections to the Atlantic, the precipitation, because of the unusually cold weather prevailing, being in the form of snow, except in the more southern districts. On the morning of the 16th a precipitation area covered the Plateau and Pacific areas, except portions of Nevada, Arizona, and Utah, which during the next two days had advanced to the Atlantic, the precipitation being generally snow; this was followed by a cold wave and generally fair throughout the East. Another large precipitation area appeared in the Northwest on the 20th, overspread most regions to the south and east, and moved off the Atlantic coast on the 23d; generous snowfall was received in most sections, except in the far South and East, where the precipitation was rain. On the 24th and 25th, little precipitation occurred, except in the vicinity of the Great Lakes and in a few other scattered localities.

On the 26th a low-pressure area appeared in the far Southwest, and during the next few days moved across the southern portion of the country to the Gulf, and thence northeastward. It was accompanied by moderate precipitation from the west Gulf region northeastward. From the 29th to the 31st a low-pressure area developed in the Southwest, and moved along the Gulf coast and up the Atlantic, increasing in intensity as it proceeded northward, accompanied by generous to heavy precipitation, which was rain in the far South, but snow from the Carolinas northward. During the same period rainy weather prevailed throughout the northern half of the Pacific Coast States, extending into Idaho and northern Nevada.

Generally high winds occurred over portions of the Great Lakes region on several dates, with the passing of cyclones over that region, but these caused little damage to property. Over most interior districts the wind movement was light during the colder portion of January, and this considerably reduced the severity of the month for livestock. A full account of the principal windstorms during the month appears as usual at the end of this section, and details of wind direction and barometer data are shown on the usual charts.

TEMPERATURE

For most of the country January was notable for temperatures far from the normal, now considerably above and again decidedly below. "Average January weather" was very uncommon.

The opening week was marked by several abrupt changes of temperature, yet averaged warmer than normal practically throughout the country, especially in the central and northeastern portions. The second week continued mild in the portion east of the Mississippi River, but was decidedly cold over nearly all the remainder, particularly from the middle and upper Missouri Valley westward to the North Pacific States.

The third week brought the culmination of the cold weather for most of the States, and in the country as a whole few weeks of more intense cold are to be found in weather records.

From the Mississippi River westward to the Cascade Mountains and almost to the western limits of Colorado and Texas the week averaged at least 15° colder than normal, and in much of the central and northern Rocky

Mountain region over 30° colder than normal. At Lander, Wyo., the mean temperature of the week was -16°. However, part of Arizona and California and a few Atlantic districts were warmer than normal during this week.

The final 10 days of the month were almost wholly colder than normal in the eastern half, decidedly low temperatures prevailing in the interior districts until about the 27th, but in the western half this period brought a marked transition, for the intense cold continued from the previous week in most States only till the 23d or 24th, then gradually yielded to mild weather which prevailed during the rest of the month.

The chart of departure of the average temperature of the month from the normal shows a decided likeness to the corresponding chart for November, 1929. In each month by far the greater part of the country was considerably colder than normal, with largest departures chiefly in the Rocky Mountains and Plains regions and Texas, while the Atlantic area and part of California were slightly warmer than normal.

The excess in the Atlantic area during January was largest in the South Atlantic States, where it was generally from 2° to 4° per day. The area of excess extended westward to include the upper Ohio Valley and the districts around Lake Ontario. In California a considerable part of the southern half of the State was slightly warmer than normal.

From Idaho, eastern Washington, and western Montana southeastward to south-central Texas the month averaged from 10° to 16° colder than normal. In eight States no colder January is found in the records of the Climatological Service, which cover about 40 years.

To eastward of the strip of greatest abnormality the departure decreased gradually, the immediate Mississippi Valley averaging about 7° below normal in the upper portion and from 2° to 5° in the lower. There was a similar decrease to westward and southwestward, the north Pacific coast averaging about 6° below normal.

The highest temperatures of the month were higher than ordinarily occur in January from the Ohio Valley northeastward, where they occurred mainly on the 9th. In the Gulf States, also, the highest marks were reached on the 9th or within a day or two earlier; but in practically all other parts of the country they occurred during the first five days of the month. The highest of all was 89° in Florida.

The lowest temperatures recorded were as low as or lower than any previous January marks in several States from the middle Rocky Mountains southeastward to the central Gulf, occurring here on the 17th or 18th; at this time the lowest marks of the month were reached in most States from the northern Plateau southeastward to the middle and southern Appalachians, while in many Middle and South Atlantic States they occurred on the 19th or 20th. The lowest mark of all in the United States proper was -57° on the 17th at a point in the mountains of Wyoming. In the Pacific Northwest, the middle and southern Plateau, and many States of the central valleys area the lowest temperatures came on the 21st or 22d, when Oregon, New Mexico, Arkansas, and Illinois surpassed their previous January low marks. Portions of the Lake region recorded their lowest marks of the month on the 26th.

PRECIPITATION

The monthly amounts of precipitation were decidedly large over the central valleys and most of the lower Mississippi Valley, the State of Arkansas averaging more than

9 inches, and several individual stations measuring more than 14 inches. The region of excess included much of the middle and upper Ohio Valley, particularly the northern portions, and most of the Lake region, yet here the excess was mainly small. To the southwestward the area of excess included eastern Oklahoma and extreme eastern Texas.

There was a moderate excess of precipitation over the central Plains and part of the south-central Rocky Mountains, likewise over the central and southern Plateau and in southern California. Much of the Southeast, especially along the coasts, had a slight excess.

From central Alabama northeastward to New England the Appalachian region received less precipitation than normal, likewise the greater part of the coast zone north of Delaware Bay. Central and western Texas and most of southern New Mexico had a similar deficiency; also most northern districts, from Lake Superior to the Pacific coast. The Washington precipitation averaged less than half the normal, and the region of deficiency extended southward in the coast States to central California.

As is likely to be the case in a winter month, heavy rains within brief periods were not numerous, but several points from northwestern Louisiana to southern Illinois did report such rains late in the first decade, Memphis recording almost 8 inches within 36 hours on the 7th and 8th.

SNOWFALL

While January was not notable for heavy falls of snow, yet it was featured by the occurrence of moderate amounts much farther south than they often occur, particularly in Texas and the lower Mississippi Valley, and by the unusual duration of the snow cover in many districts, especially the southern Plains.

From the south-central Rocky Mountain region eastward to the central valleys the month's snowfall was nearly or quite the greatest quantity that ever fell in January, especially in Oklahoma, where the amount was 50 per cent above that of any previous January of record.

In the north-central and southeastern portions of the country the amounts were usually more than the January normals and at the lower elevations of the far West likewise the amounts were unusually great. At Roseburg, Oreg., the snow attained the greatest depth ever recorded, 7.5 inches, and the ground was covered constantly for 14 days.

In the highest portions of the far West the snowfall was frequently less than normal, particularly in Washington. Over the Northeast and much of the Ohio Valley there likewise was somewhat less than the average January snowfall.

The high elevations of the West usually had stored snow indicating improved prospect for stream flow. However, the outlook in several portions, particularly in the Pacific States, had been unfavorable at the close of December, and was not sufficiently improved during January to bring the prospects up to the average for that date.

RELATIVE HUMIDITY AND CLOUDINESS

The average relative humidity for the month was generally above the normal over most districts except throughout the Appalachian region, the southern portion of the east Gulf States, portions of the Lake region, the central Missouri Valley, the far Northwest and most of the southern portion of California, where the average humidity was mainly less than normal.

In the Eastern States and the Gulf States, and generally over the Southwest as far as the southern California coast, cloudy weather seems to have been more prevalent than usual in January; but part of the far Northwest had more clear weather than usual.